

# **City of Manchester- Mammoth Road CMAQ Application**

**SNHPC TAC Meeting  
February 16, 2023**



# Agenda

- ◉ Project Location
- ◉ Existing Conditions
- ◉ Project Readiness
- ◉ Financial Readiness
- ◉ Stewardship/Sustainability
- ◉ Air Quality Analysis
- ◉ Questions & Answers



# Project Location



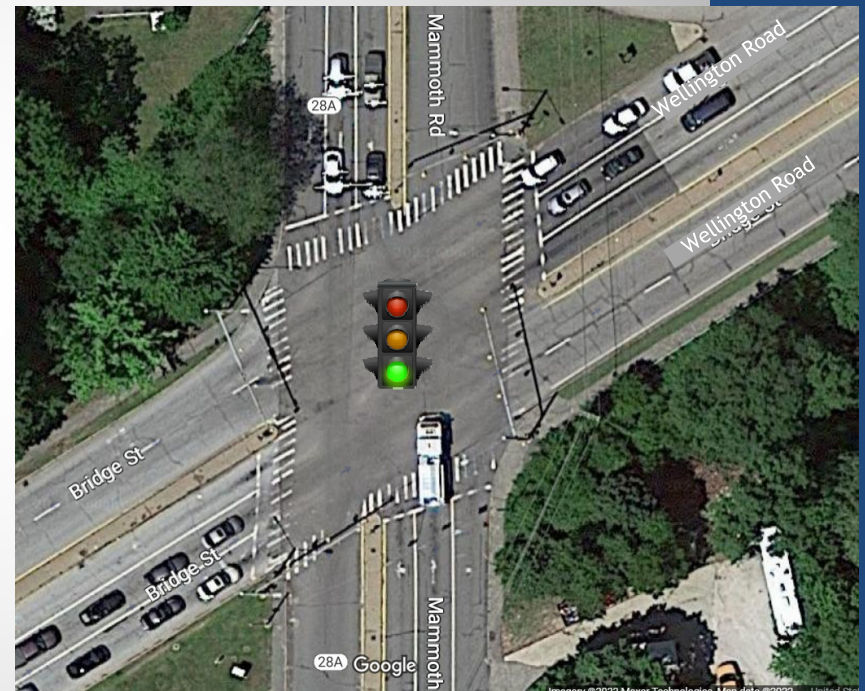
- Projects that improve traffic flow, including efforts to provide signal system optimization, construct HOV lanes, streamline intersections, add turning lanes, improve transportation systems management and operations





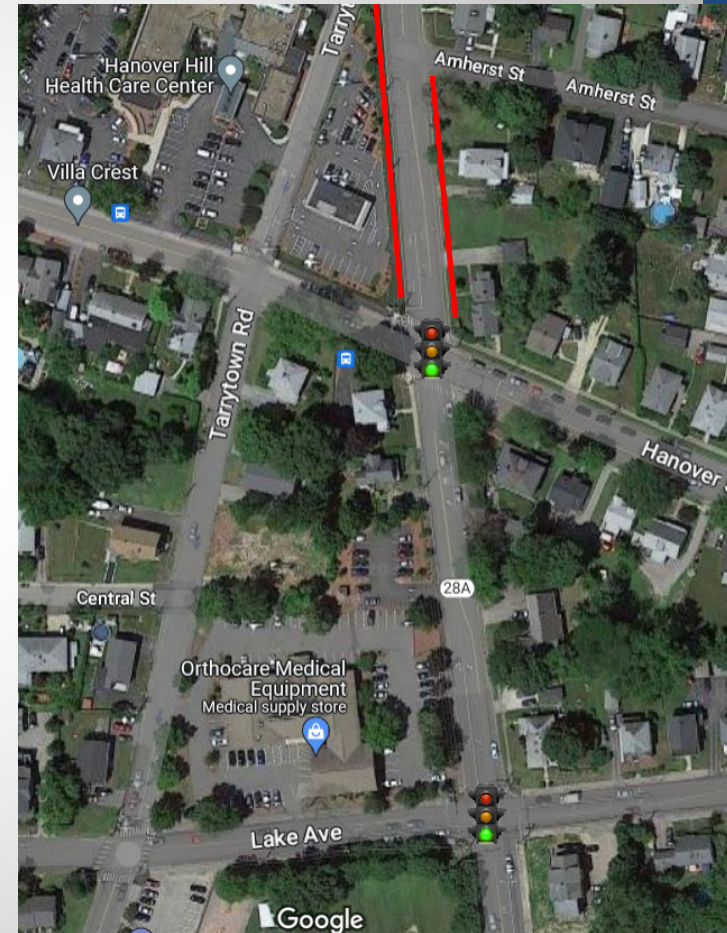
# Mammoth Road & Bridge Street/ Wellington Road

- ⦿ Average Annual Daily Traffic (AADT)-
  - Wellington Road- 25,000 vpd
  - Mammoth Road- 15,000 vpd
- ⦿ Was included as part of the City's 10 Year Plan Project Submittal.
  - Capacity improvements were listed in top priorities of the region at last update
  - Phased project; recommended signal upgrades through CMAQ process
  - Variability in optimal cycle length suggested adaptive signal control could improve traffic flow
  - Operational deficiencies under both the weekday morning and weekday evening peak hours



# Mammoth Road at Lake Avenue and Hanover Street

- Close Intersection Spacing
  - Evaluate need for turn lanes
- Several approaches operating at LOS E/F under existing conditions
  - Adaptive Traffic Control/Signal Performance Measures to improve operations and coordination
- No sidewalk between Hanover Street and Amherst Street
- Road Safety Audit at Hanover Street in 2014
  - Signal timing and coordination as well as gaps in the sidewalk network were identified in the report as operational and safety issues.





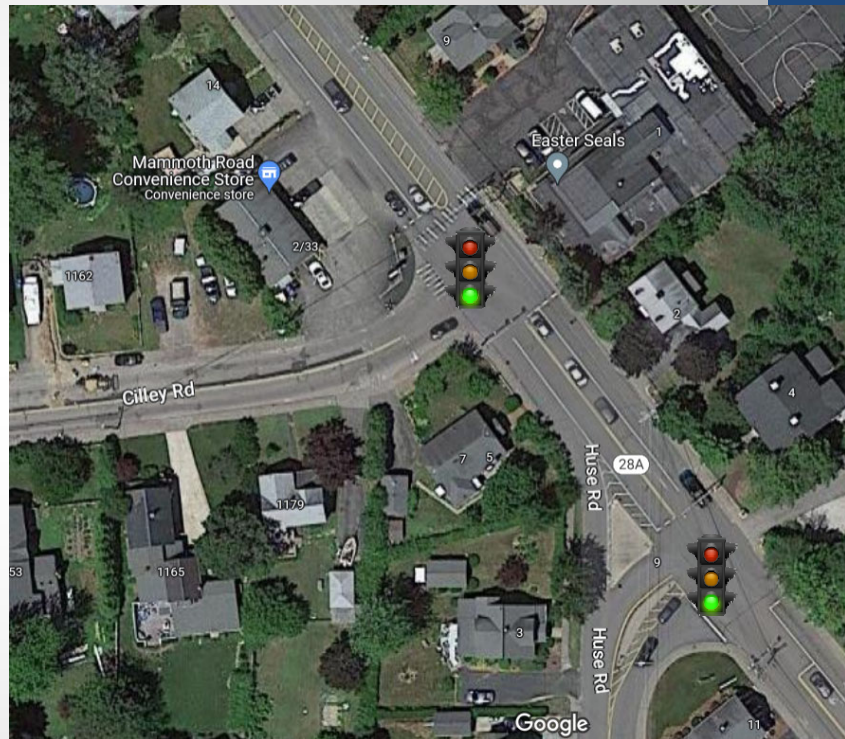
# Mammoth Road at Massabesic Street and Candia Road

- ◉ Close intersection spacing
  - Existing queues in AM and PM peak extend beyond the length of queue lanes
- ◉ Run as a single intersection with overlap phases
- ◉ Several approaches operating at LOS E/F
  - Adaptive Signal Control/Signal Performance Measures to improve operations and coordination



# Mammoth Road at Cilley Road and Huse Road

- Close intersection spacing
  - Existing queues in AM and PM peak extend beyond the length of queue lanes
- Run as a single intersection with overlap phases
- Several approaches operating at LOS E/F
  - Adaptive Signal Control/Signal Performance Measures to improve operations and coordination



# National Performance Management Research Data Set

- Analysis performed by SNHPC to evaluate travel time index
- Data was analyzed for 2018 and 2022 in several sections and showed moderate congestion on all sections during at least one peak hour per weekday between Cilley Road and Hanover Street.

Mammoth Rd: Candia Rd to Hanover St (Northbound)		
129+12403		
Median AM Peak TTI		Median PM Peak TTI
1.29	Moderate Congestion	1.62 Congested
TTI		
6:00 AM	1.10	Minimal Congestion
7:00 AM	1.42	Moderate Congestion
8:00 AM	1.31	Moderate Congestion
9:00 AM	1.27	Moderate Congestion
3:00 PM	1.63	Congested
4:00 PM	1.64	Congested
5:00 PM	1.62	Congested
6:00 PM	1.26	Moderate Congestion





# Project Readiness

- ⦿ Letter of support from the Mayor included in grant application
- ⦿ 7 LPA Certified Staff within the Department of Public Works
  - As Project Manager, I have participated and overseen several CMAQ, TAP, and currently City's RAISE Grant project through FHWA.
- ⦿ Project included in prior planning efforts
  - 10 Year Plan
  - Road Safety Audit



# Financial Readiness

- City requested \$3,000,000 project (80% federal, 20% local match)
- Match will be funded thru CIP program
  - DPW received permission from the Committee to apply for the grant with an understanding on future funding commitment

## To the Board of Mayor and Aldermen of the City of Manchester:

The Committee on Community Improvement respectfully recommends, after due and careful consideration, that the request from Kristen Clarke, Traffic Engineer, for authorization to apply for a NH Department of Transportation CMAQ grant in the amount of \$3 million to promote air quality improvements through reduced vehicle emissions be approved.

*(Unanimous vote)*

Respectfully submitted,



Clerk of Committee

At a meeting of the Board of Mayor and Aldermen held January 3, 2023, on a motion of Alderman Stewart, duly seconded by Alderman Trisciani, the report of the Committee was accepted and its recommendation adopted.



City Clerk



# Stewardship/Sustainability

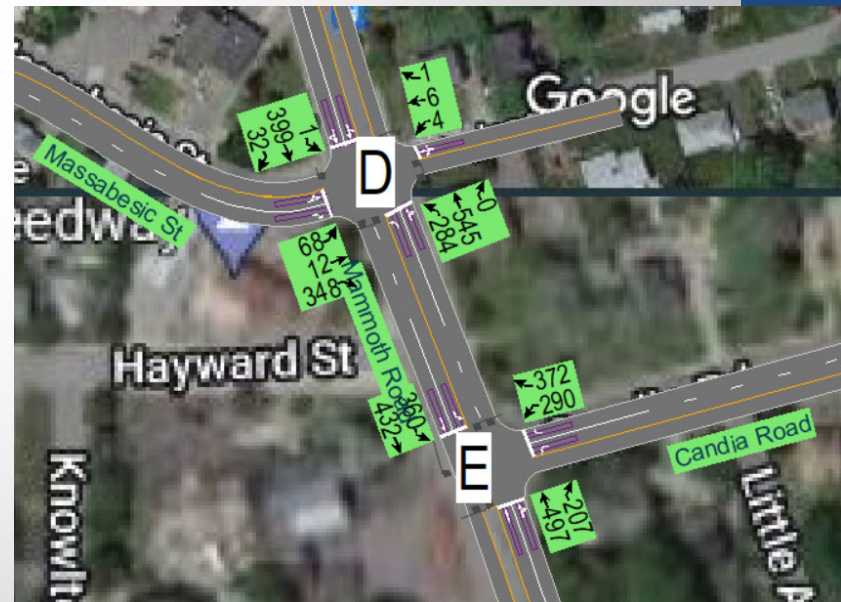
- City commits to maintaining all improvements proposed in this application as part of our annual operating budget.
- The project will upgrade existing signals and widen existing roadways, so all services (snow plowing, street cleaning, traffic signal maintenance, etc) that are currently provided to the corridor will be expanded to include the proposed improvements.
- Maintenance program to continually update and improve our traffic signal infrastructure.
  - Ten skilled permanent, full time employees who are fully dedicated to provide twenty-four hour maintenance to our traffic infrastructure.





# Air Quality Analysis

- ◉ Federal Highway Administration (FHWA) Air Quality Calculators
- ◉ Input needed for air quality analysis typically includes:
  - Average Annual Daily Traffic (AADT)
  - Peak Hour Volumes
  - Truck Percentage
  - Existing Corridor Delay
  - Existing Cycle Lengths
- ◉ City collected traffic volumes in December/January and developed existing conditions Synchro models to provide necessary data



# Questions?

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